UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,558	01/11/2002	Jian Fan	10018003-1	9516

7590   02/24/2006

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EXAMINER
LE, BRIAN Q

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _14 December 2005_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-25_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6,8,10,15-19,21 and 23-25_ is/are rejected.

7)☒ Claim(s) _7, 9, 11-14, 20, and 22_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Amendment and Arguments

1.   Applicant's amendment filed December 14, 2005, has been entered and made of record.

2.   The rejection of claim 10 under 35 U.S.C. 112, first paragraph is withdrawn.

3.   The rejection of claims 8, 10, and 15-17 under 35 U.S.C. 103 over the combination of

Lee et al. U.S. Patent No. 6,160,913 and Fan et al. U.S. 6,757,081 is withdrawn since the

Applicant indicated (page 9 or Remarks) that Fan Reference is assigned to the assignee of the

present application.

4.   Applicant's arguments with regard to claims 1-25 have been fully considered, but are not

considered persuasive because of the following reasons:

Regarding the mark the Applicant has made (page 8 of the Remarks) cited "The office

action dated September 14, 2005 indicates that base claim 1 would be allowable if the term

"edge-bounded averaging" was limited to "the average value of connected pixels within a mask

centered at (i, j)", the Examiner respectfully disagrees. Nowhere in the Office Action indicated

that the Application would be allow if the Applicant amended and limited the term "edge-

bounded averaging" to "the average value of connected pixels within a mask centered at (i, j)".

Rather, the Examiner cited the specific location in the original disclosure wherein the definition

of "edge-bounded averaging" is not clearly defined and thus allowance must be withdrawn for

further searches and considerations. Therefore, the case will not allowed if the Examiner

continues to find prior arts that teach the claimed limitation. In this case, the Examiner firmly

believes that Lee et al. U.S. Paten No. 6,160,913 still teaches claim 1's limitations.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1-4, 6 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee

et al. U.S. Patent No. 6,160,913.

Regarding claim 1, Lee teaches a method to identify text-like pixels (character) from an

image, the method (column 2, lines 27-33) comprising:

(a) providing an image;(FIG. 1, element 12) and

(b) classifying line segments of pixels (halftone pixel classification) (FIG. 4, element

402) within the image by edge-bounded averaging, the edge-bounded averaging including

finding an average value of connected pixels within a mask (within a pixel window) centered at

location (i, j) (average pixel intensity value within pixel window centered about pixel position

(i,j) as clearly defined in the original specification and the amended claim) (column 6, lines 30-

40).

For claim 2, Lee further teaches the method further comprising:

(c) examining sub-blobs of pixels (the analysis of halftone by pixel run) within the image

(FIG. 12); and

(d) performing sub-blob connectivity analysis (perform analysis of halftone by the

connectivity of pixels run) (FIG. 12).

Referring to claim 3, Lee teaches the method further comprising:

(e) identifying and classifying edges of pixels within the image (column 2, lines 55-65);

(f) performing filling to further classify pixels within the image (re-assigning step) (column 2, line 65 to column 3, lines 10).

(g) performing consistency analysis of pixels within the image (perform uniformity of pixel) (column 4, lines 54-67).

(h) performing pixel connectivity analysis of pixels within the image; and

(i) identifying text pixels within the image (column 2, lines 30-33).

For claim 4, Lee teaches the method wherein the connected pixels within the mask are of the same of edges or non-edges (the classified edge pixels in a 7x7 pixel window) (column 2, lines 64-67).

For claim 6, Lee discloses the method further comprising smoothing the image (column 9, lines 5-20).

For claim 23-25, please refer back to claims 1-3 for the teaching and explanations.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of

Lee et al. U.S. Patent No. 6,160,913 and Kodaira et al. U.S 6,868,183 as applied to claim 1

above.

Regarding claim 5, Lee does not explicitly teach the method comprising performing color

space conversion of the image. Kodaira teaches a method of processing text-like pixels (column

4, lines 58-65) comprises a color space conversion mean (column 16, lines 1-20). Modifying

Lee's method of processing text-like pixels according to Kodaira would able to allow the color

conversion capable from one color space to another. This would improve processing and

therefore, it would have been obvious to one of the ordinary skill in the art to modify Lee

according to Kodaira.

12.   Claims 8, 10, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Lee et al. U.S. Patent No. 6,160,913 and Hashimoto et al. U.S 6,987,045 as

applied to claims 1-3 above.

Regarding claim 8, Lee teaches a method of pixels classification (halftone pixel

reclassification) (FIG. 4 and column 6) and edge processing (column 2, lines 64-67). However,

Lee does not explicitly teaches the method of classifying edges of pixels wherein pixels can be

classified as non edge, white edge or black edge. Hashimoto teaches a method of processing

text-like of the image (character edge processing) (abstract) wherein pixels are classified as non

edge (column 11, lines 42-47). Modifying Lee's method of processing text-like pixels according

to Hashimoto would able to classify pixels of image to more specific regions whether black edge,

white edge or no edge for further processing. This would improve processing and therefore, it

would have been obvious to one of the ordinary skill in the art to modify Lee according to

Hashimoto.

For claim 10, Hashimoto also teaches the method wherein classifying line segments o

pixels starting from a first side of a line proceeding to a second side of the line identifying

consecutive segments of pixels as non edge, white edge or black edge (column 4, lines 64-67 to

column 5, lines 1-11).

As to claim 15, Lee discloses the method wherein step (h) performing pixel connectivity

analysis of pixels within the image (halftone line merge) (FIG. 4, element 412) comprises:

Identifying aggregates of pixel having been identified as candidates for text, the

aggregates being sub-blobs (halftone reclassification, gathering of black pixels in local map)

(FIG. 4 and FIG. 5, element 512); and

Collecting statistics with respect to each sub-blob, wherein said statistics are selected

from the group consisting of total number of pixels (Counting number of black pixels in the local

map) (FIG. 5, element 512 and FIG. 8, element 608).

Regarding claim 16, Hashimoto further teaches the method wherein step (c) examining

sub-blobs of pixels within the image comprises: examining each sub-blob to determine whether

it is non text (the process of differentiate in gradation of target pixel and each of the eight

adjacent pixels to determine non-edge which also is non text since Hashimoto teaches text's edge

processing) (column 4, lines 64-67 to column 5, lines 1-11).

Regarding claim 17, please refer back to claims 10 and 16 for further teachings and

explanations.

For claim 18, please refer back to claims 1-3 for further teachings and explanations.

13.   Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Lee et al. U.S. Patent No. 6,160,913 and Brooks et al. U.S 6,406,062 as applied

to claim 18 above.

Regarding claim 19, Lee does not specifically teach outputting a two layer image

representation compatible with PDF Reference 1.2. Brooks further teaches a method that use

Adobe Photoshop to produce "layer" images as "pdf" file (PDF reference). Modifying Lee's

method of processing text-like pixels according to Brooks would able to produce layered images

using Adobe Photoshop Software. This would improve processing and therefore, it would have

been obvious to one of the ordinary skill in the art to modify Lee according to Brooks. Plus, the

Examiner takes Official Notice that it is well known in the art that different PDF Reference

Version can be use to output layers image representation.

For claim 21, please refer back to claim 19 for the explanation.

Allowable Subject Matter

14.   Claims 7, 9, 11-14, 20, and 22 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

CONCLUSION

15.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patents are cited to further show the state of the art with respect to edge and pixel processing:

U.S. Pat. No. 4,821,336 to Roye, teaches image method for simplifying run length from scanning of images.

U.S. Pat. No. 5,974,197 to Lee et al., teaches loop filter and loop filtering method.

U.S. Pat. No. 6,868,183 to Kodaira et al., teaches image processing method depending on the type of original image.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
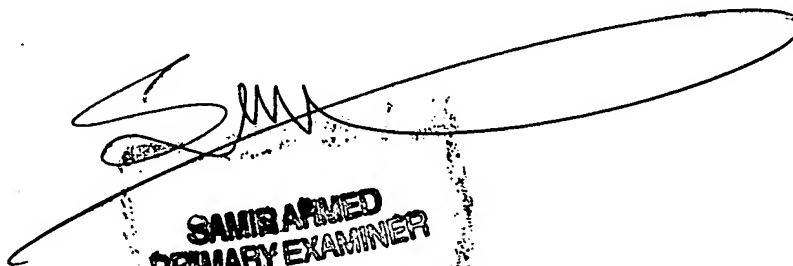
Contact Information

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The

examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL
February 16, 2006

SAMIR AHMED
PRIMARY EXAMINER